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(12) **United States Patent**  
**LaVallie et al.**(10) **Patent No.:** **US 9,409,981 B2**  
(45) **Date of Patent:** **Aug. 9, 2016**(54) **ANTIBODY TO GDF8 AND USES THEREOF**(71) Applicant: **Pfizer Inc.**, New York, NY (US)(72) Inventors: **Edward Roland LaVallie**, Harvard, MA (US); **Lisa Anne Collins-Racie**, Acton, MA (US); **Christopher John Corcoran**, Arlington, MA (US); **Lioudmila Gennadijevna Tchistiakova**, Andover, MA (US); **John Adam Nowak**, Stratham, NH (US); **Riyez Karim**, North Andover, MA (US); **Xiang-Yang Tan**, Reading, MA (US); **Kimberly Ann Marquette**, Somerville, MA (US); **Geertruida Machteld Veldman**, Sudbury, MA (US)(73) Assignee: **Pfizer Inc.**, New York, NY (US)

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(51) **Int. Cl.****A61K 39/00** (2006.01)**A61K 39/395** (2006.01)**C07K 16/22** (2006.01)(52) **U.S. Cl.**CPC ..... **C07K 16/22** (2013.01); **A61K 39/395** (2013.01); **A61K 2039/505** (2013.01); **C07K 2316/96** (2013.01); **C07K 2317/92** (2013.01)(58) **Field of Classification Search**

None

See application file for complete search history.

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*Primary Examiner* — Elizabeth C Kemmerer(57) **ABSTRACT**

The disclosure provides novel molecules related to growth and differentiation factor 8 (GDF8), in particular epitopes specific to GDF8 and other specific antagonists of GDF8 in particular anti GDF8 antibodies or antigen binding protein or fragment thereof which may inhibit GDF8 activity and signal in vitro and/or in vivo. The disclosure also provides for an immunoassay used to detect and quantitate GDF8. The disclosure also provides methods for diagnosing, preventing, ameliorating, and treating GDF8 associated disorders, e.g., degenerative disorders of muscle, bone, and insulin metabolism. Finally, the disclosure provides pharmaceuticals for the treatment of such disorders by using the antibodies, polypeptides, polynucleotides, and vectors of the invention.